

Instantaneous SARB Action Items for Edition3 Operational Software Delivery

Table 1: General Instantaneous SARB Edition3 Delivery Information

Row Number	Information Description	Detail
1	Scheduled Delivery Date	
2	SCCR number	622
3	Software Included in delivery package	Instantaneous SARB unique code SARBlib
4	CERESlib Delivery	CRS_IO.f90 SARB_Params
5	SARB PGE(s) included in delivery	CER5.0P1 CER5.1P1 CER5.4P1
6	Sample Read Package	New sample read package required
7	Other Affected Subsystems	FSW - SS6 Synoptic SARB - SS7.2
8	Documentation Updates	Data Products Catalog Test Plan Operator's Manual
9	Subject Matter Experts	SCIENCE TEAM (ST): Tom Charlock Fred Rose Dave Rutan Wenyng Su

Table 2: Instantaneous SARB Aqua Edition2A Delivery Action Items

Action Item	Requirement Definition	Status Update	Verification of completion
Implement SARB Requirement 5-5.0			

Table 2: Instantaneous SARB Aqua Edition2A Delivery Action Items

Action Item	Requirement Definition	Status Update	Verification of completion
Implement SARB Requirement 5-5.1	Email 1., Fred Rose contributing software (SCCR material highlighted in magenta)	Email 2. - DMT report of implementation	
Implement SARB Requirement 5-5.2	Email 3.		
Implement SARB Requirement 5-5.3	Email 4. Discussion about adding parameters to Edition 3 CRS highlighted in magenta		
Streamline PCF generator scripts	An improvement. Not a requirement levied by ST. No impact on science results.		
Update Documentation (Table 1, Row 8)			
Update sample read package distributed with orders from the ASDC (Table 1, Row 6)			

Action Item List Status: On-going, delivery not complete

Email 1.

Date: Tue, 10 Jan 2006 12:24:06 -0500
From: Fred Rose <f.g.rose@larc.nasa.gov>
To: Scott Zentz <s.m.zentz@larc.nasa.gov>
CC: Lisa Coleman <L.H.Coleman@larc.nasa.gov>,
"T.E Caldwell" <T.E.CALDWELL@larc.nasa.gov>,
Dave Rutan <D.A.rutan@larc.nasa.gov>,
Zhonghai Jin <z.jin@larc.nasa.gov>,
Tom Charlock <Thomas.P.Charlock@nasa.gov>
Subject: Ed3FuJin20060110.1112

Scott,

Here is
lightning:/CERES/sarb/home/rose/fuliou/Ed3FuJin20060110.1112.tar.gz
Alternately
ftp://typhoon.larc.nasa.gov/pub/rose/fuliou/Ed3FuJin20060110.1112.tar.gz

The fu code package with changes necessary for CERES ED3 processing.

If could do so in the next few days try to download and "make"
the code library and run the example programs.

Have compiled this on both "lightning"(sgi) and "manila"(mac)
see required environment flags for each system in file "env"
in the top directory of the package.

on lightning should be as simple as..

```
gzip -d Ed3FuJin20060110.1112.tar.gz
tar -xvf Ed3FuJin20060110.1112.tar
cd Ed3FuJin20060110.1112
source /CERES/lib/sgi64_lib/ceres-env.csh
make
```

..This should compile the code library,
example codes and run the example codes.

If the code compiles and runs OK...
try to get familiar with...

Ed3FuJin20060110.1112/src/zjin/simple.f90

150 lines of code that set up and runs an example
that contains most of the major elements that will be

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needed for CERES ED3....

Once you get a bit familiar with it then we can get into adapting this into CERES (CRS,SYNI) code, IT WILL BE TRICKY!!!

IN ORDER TO HANDLE OVERLAPPED CLOUDS MUCH OF THE EXISTING CERES CODE HAD TO BE BROUGHT IN TO THE DOMAIN OF THE FU CODE!!!

- a)Setting up pressure levels
- b)Interpolation of Input atmosphere.
- c)New input structures for Atmosphere, Clouds
- d)New subroutines that MUST be called before radiative transfer.

I REALLY HOPE THERE IS NOT A NEED TO ALTER CONTENTS OF ANY FILE IN Ed3FuJin20060110.1112/lib/src

If there is,LET ME KNOW!!! or we will again get into version confusion when there is a need to redeliver the FU code library again... Assume this will happen!!

Would it be possible in the operational code set up a new library directory that ONLY contains what is contained here in ./lib/src as a seperate library from /sarb/lib maybe something like "/sarb/libfu" OR "/sarb/lib/fulib" ???

What is New about this code....

- 1) 18 SW bands (instead of 15)
- 2) Treatment of Overlapped Clouds (needed for Ceres Ed3 and Calipso)
- 3) Z.Jin Ocean(20060109), Snow,Ice spectral sfc alb LUTs , Integrated into code package.
- 4) J.Donaldson optimized GWTSA solver version (from T.Caldwell 22 Dec 2005 15:28)

--

Fred G. Rose (757)827-4649
<http://srbsun.larc.nasa.gov/~rose/>
f.g.rose@larc.nasa.gov

Email 2.

Date: Wed, 18 Jan 2006 15:19:33 -0500 (EST)
From: "Scott M. Zentz" <szentz@saisun18.larc.nasa.gov>
Reply-To: "Scott M. Zentz" <szentz@saisun18.larc.nasa.gov>
Subject: Re: Ed3FuJin20060110.1112
To: f.g.rose@larc.nasa.gov
Cc: l.h.coleman@larc.nasa.gov, t.e.caldwell@larc.nasa.gov

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Fred,

I have finally been able to compile and link both SYN and CRS for the SGI and Macs using the new library you provided. No changes were made to any source code within the the new Fu library. I did alter the Makefile some so that it was easier for the SARB lib to link with it as well as linking with the actual SYN and CRS source code. So basically I guess I am ready to run some tests. Any particular tests you had in mind?

Scott

>Date: Tue, 17 Jan 2006 11:26:42 -0500
>From: Fred Rose <f.g.rose@larc.nasa.gov>
>X-Accept-Language: en
>MIME-Version: 1.0
>To: "Scott M. Zentz" <szentz@saisun18.larc.nasa.gov>
>Subject: Re: Ed3FuJin20060110.1112
>Content-Transfer-Encoding: 7bit

>

>No Problem...

>

>"Scott M. Zentz" wrote:

>>

>> Fred,

>>

>> Sorry for the delay. I was away all last week. ANyway I will talk with Tom to

>> see if he has looked into any of this if not I will start work on it today.

>>

>> Scott

>>

>> >Date: Tue, 10 Jan 2006 12:24:06 -0500

>> >From: Fred Rose <f.g.rose@larc.nasa.gov>

>> >X-Accept-Language: en

>> >To: Scott Zentz <s.m.zentz@larc.nasa.gov>

>> >CC: Lisa Coleman <L.H.Coleman@larc.nasa.gov>, "T.E Caldwell"

>> <T.E.CALDWELL@larc.nasa.gov>, Dave Rutan <D.A.rutan@larc.nasa.gov>, Zhonghai Jin

>> <z.jin@larc.nasa.gov>, Tom Charlock <Thomas.P.Charlock@nasa.gov>

>> >Subject: Ed3FuJin20060110.1112

>> >MIME-Version: 1.0

>> >Content-Transfer-Encoding: 7bit

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>> >Scott,

>> >

>> >Here is

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>> >need to redeliver the FU code library again... Assume this will happen!!
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>> >
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code
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>> 15:28)
>> >
>> >
>> >--
>> >Fred G. Rose (757)827-4649
>> ><http://srbsun.larc.nasa.gov/~rose/>
>> >f.g.rose@larc.nasa.gov
>> >
>> >

Email 3.

Date: Thu, 26 Jan 2006 16:19:09 -0500
From: Fred Rose <f.g.rose@larc.nasa.gov>
To: Scott Zentz <s.m.zentz@larc.nasa.gov>
CC: Lisa Coleman <L.H.Coleman@larc.nasa.gov>,
Tom Charlock <Thomas.P.Charlock@nasa.gov>,
Dave Rutan <D.A.rutan@larc.nasa.gov>
Subject: Ed3 Surface Optics

Scott,

Have finally been able to take the existing
ED2 code dealing with surface spectral optical properties
and attach it to the 4 necessary input files

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17|CER_HMPSAL_Aqua-FM4-MODIS_Edition1B_999999.200307|/Users/szentz/sarb/data/ancillary/dynamic/sarb|||1

18|flsa0404_lut.2s.coef|/CERES/sarb-1/zentz/sarb/data/ancillary/static/sarb|||1

29|flsa200508c.fubin.tab|/CERES/sarb-1/zentz/sarb/data/ancillary/static/sarb|||1

13|IGBP_Ver3.0|/CERES/sarb-1/zentz/sarb/data/ancillary/static/sarb|||1

And now in the beginning stages of testing the new ED3 Sfc optics code. However in the process, I discovered many instances of picking variables out of the MODULE SARB_VAR that destroyed the modular ability to test the code in an off-line way.

So have added variables to the structure ss% which I intended to be the ONLY way of input and output to SUBROUTINE choose_spectral_properties which is the toplevel subroutine that decides how to determine sfc optical properties.

As I said yesterday the files...

Spectral_Dat18.f90

Spectral_Igbp18.f90

Spectral_Sfc18.f90

..are all new replacing...

Spectral_Dat.f90

Spectral_Sfc.f90

...Also I had to make some rather minor changes to...

ASSALUT_Sfcalb.f90

...to allow off-line testing I'm ASKING again and HOPEING you can keep this standard which only has inputs and outputs thru

- a) The "ss%" input output structure.
- b) parameters ie. constants via USE
- c) FILE Input from the 4 file types above.

Most of the problems we had with CRS in the past dealt with the complex logic and (logic mistakes) in these sections of code. Having the ability to make this part of the code jump thru various hoops should make more robust.

Will begin some more intricate testing tomorrow. With luck I can hand the code over to you for inclusion in the operational ED3 version sometime next week.

--

Fred G. Rose (757)827-4649

<http://srbsun.larc.nasa.gov/~rose/>

f.g.rose@larc.nasa.gov

Email 4.

Date: Wed, 8 Feb 2006 11:03:07 -0500

To: Shashi Gupta <s.k.gupta@larc.nasa.gov>

From: Tom Charlock <Thomas.P.Charlock@nasa.gov>

Subject: Re: OMI column ozone

Cc: "Shashi K. Gupta" <s.k.gupta@larc.nasa.gov>,
Fred Rose <f.g.rose@larc.nasa.gov>,
Erika Geier <e.b.geier@larc.nasa.gov>,
"David P. Kratz" <david.p.kratz@nasa.gov>,
"Paul W. Stackhouse" <paul.w.stackhouse@nasa.gov>,
Thomas Caldwell <t.e.caldwell@larc.nasa.gov>,
Lisa Coleman <l.h.coleman@larc.nasa.gov>,
Wenyng Su <w.su@larc.nasa.gov>, David Rutan <d.a.rutan@larc.nasa.gov>

Shashi,

Thank you for sending the information on OMI and on the reliability of our sources of ozone data. Based on your suggestions, I recommend that Tom Caldwell program CERES to continue on the track to use

1. SMOBA
2. OMI (if no SMOBA)
3. Climatology

The program structure would be similar to what he has to date (TOMS instead of OMI).

My main concern about ozone is the coming surface UV product. It will be in SYN Edition 2.

Based on this ozone dialog, it appears that total ozone should be included in the Data Product Catalog (DPC) for Edition 3 of SYN. Outside users of surface UV will get it from SYN (or more likely, from a coarse resolution on line product that we'll distribute via CAVE). If by some very small chance, our ozone source turns sour (climatology) for a brief time frame, the user of surface UV will then see it.

We have to change our Data Product Summary to indicate that the surface UV will also be in CRS for Edition 3. The user here is us; we need it for validation. We also need CRS Edition 3 with Wenyng's "new" UV; and new total sky PAR and new PAR direct/diffuse ratio.

Other new products for Edition 3, that are not yet on the Data Product Summary, include CRS supplementary broadband

all-sky SW flux and radiance from Seiji's LUT, and CRS supplementary pristine SW fluxes at surface and TOA from a COART-based LUT.

Tom

At 2:37 PM -0500 2/7/06, Shashi Gupta wrote:

>Hi Tom,

>

>I just had a brief chat with Fred regarding the choice of back-up
>ozone source for CERES in place of TOMS which ceased operation
>recently. Fred tells me that you are now inclined to go with a
>zonal monthly climatology based on TOMS data instead of TOMS-like
>OMI, primarily because of the inter-orbit gaps that are present in
>the OMI data. This is just to bring to your attention that similar
>gaps have always existed in TOMS data also. I believe, they have
>never attracted our attention because SMOBA supply line has been
>very steady. I do not recall any significant interruption in the
>SMOBA stream since CERES started using it. In fact, inter-orbit
>gaps in OMI data, at least the ones that Fred showed me, were
>smaller overall than were present in TOMS fields. Bottom line: OMI
>is at least as good for the job as TOMS was.

>

>All that said, I think having some kind of climatology as a final
>back-up is still a good idea. In fact, I recall that when we first
>put together the ozone hierarchy for CERES in mid 1990's, we did
>have a monthly zonal climatology (based on Eric Fleming's data from
>Goddard) as a final back-up.

>

>Shashi

>